# Thin Asphalt Overlays

2017 Roundtables

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# Thin Asphalt Overlays

- What are Thin Asphalt Overlays?
- Why use the Thin Overlays?
- When in the pavement life are we using them?
- Where will they be used? (Locations)

# Thin Asphalt Overlays…..

are a routine maintenance/ pavement preservation tool that can provide good life cycle performance when placed on structurally sound pavements. Extends available funds in order to pave more miles.

Not a good candidate for UTBWC: Deep rutting


Not a good candidate for UTBWC: Severe Cracking

# MD's Current Thin Asphalt Overlay Alternatives:

- Ultra Thin Bonded Wearing Course
- Micro Surfacing
- Chip Seal
- Open-Graded Friction Course

# Thin Asphalt Overlay Options:

- Developing a work plan to add to our Thin Overlay toolbox:

  1” 9.5mm, PG64E-22, L1, HDFV

  ¾” – 4.75mm, PG64E-11, L1, HDFV

  Open-Graded Friction Course (OGFC)

  High Performance Thin Overlay (HPTO)

  Ultra-thin Bonded Wearing Course (UTBWC) 5/8”- 3/4”

# Benefits of Thin Asphalt Overlays

## Long life and low life-cycle cost!

- For roads that have reached their maintenance interval while exhibiting low levels of distress.
- 6 – 12 year life extension

## Safety For User

- Minimize traffic delays
- Staged construction
- Smooth surface
- Restore skid resistance
- Lower noise

## Structural Advantages

- Maintain grade & slope
- Withstands heavy traffic
- Easy to maintain

# Cons of Thin Asphalt Overlays: UTBWC, MicroSurfacing, Chip Seals

- Specialized equipment needed
- Low supply of vendors to provide current resurfacing alternatives
- Handwork sometimes needed
- Must be placed at 50˚ and rising

# National Survey Results: Use/Thickness

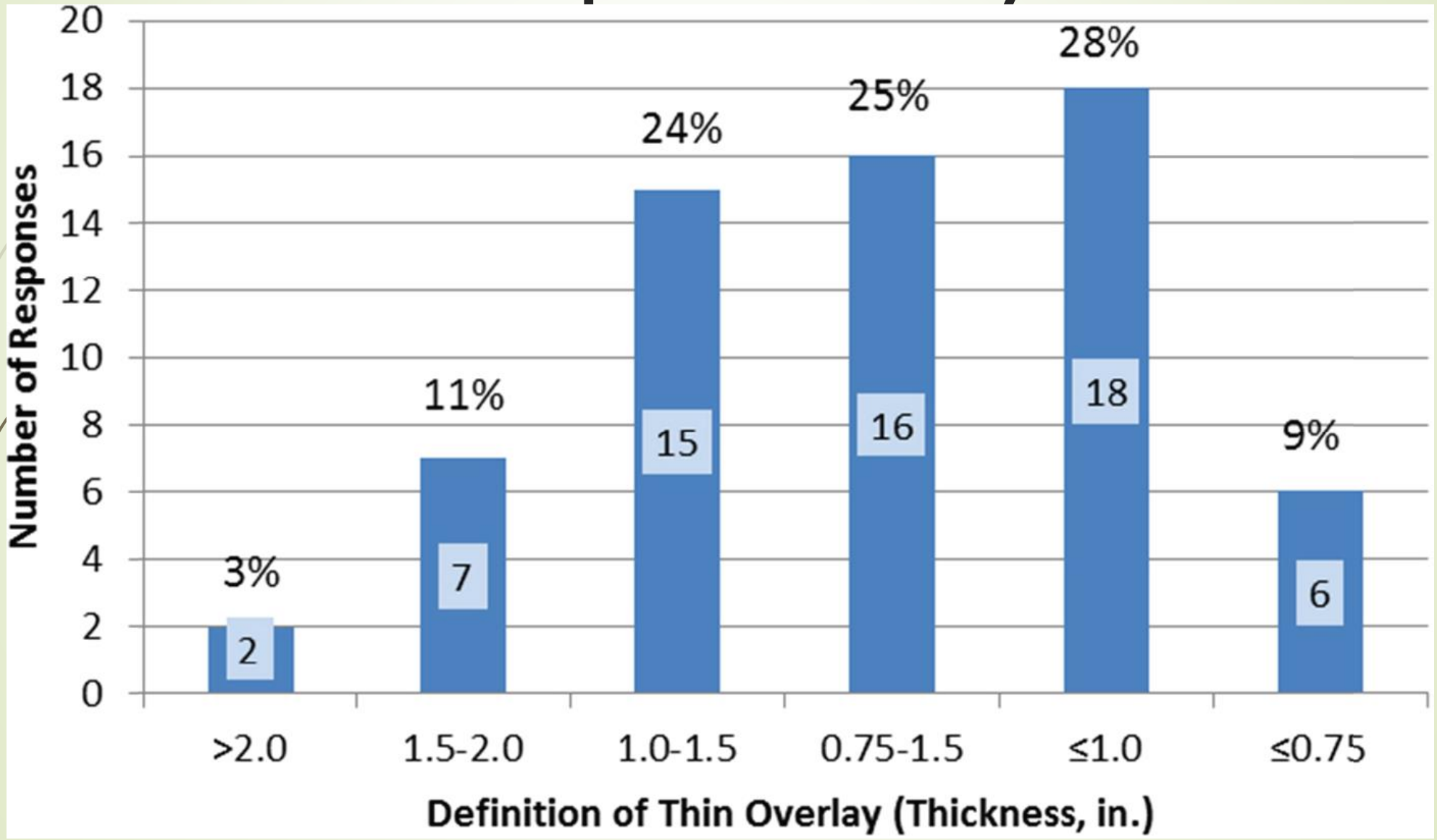
- **2014 NCHRP Survey:**

  **Survey results from 47 of 52 US jurisdictions and 8 private companies.**

  **Lift thickness varies by state. Alaska uses 2” as their thin lift; others use ¾”. Maryland: 1” or less.**

(Source: NCHRP Synthesis 464, Thin Asphalt Concrete Overlays, 2014)

# RESPONSE TO SURVEY QUESTION ON THICKNESS:
## Thin Asphalt Overlays



# Maryland's Plan for Thin Overlays

- Use for roads that have reached their maintenance interval while exhibiting low levels of distress.

- Currently use Microsurfacing and Ultra-Thin Bonded Wearing Course (UTBWC), with Chip Seal spec being revised

# Maryland Specifications - UTBWC

- SECTION 500 — ULTRA THIN BONDED WEARING COURSE
- DESCRIPTION. Apply a Polymer Modified Emulsion Membrane then overlay immediately with a thin Gap-Graded Stone Matrix Asphalt (GGSMA) mix. The application of these two materials per this Special Provision is referred as an Ultra Thin Bonded Wearing Course.

- SECTION 900 —ULTRA-THIN BONDED WEARING COURSE
  - Polymer Modified Emulsion Membrane
  - Gap-Graded Stone Matrix Asphalt (GGSMA) Mixture for UTBWC

# Where will we use UTBWC / Microsurfacing?

- District locations, upcoming projects

# District One – UTBWC

- MD 16
- MD 331
- MD 575
- MD 14
- Timeframe: Pave in Spring 2017

# District Two – UTBWC

- In project selection process. Ad date of May 2017.
- Completed 5 UTBWC in 2016

# Comments from Ed Stein and Henry Dierker: Lessons Learned

- **UTBWC in D2 worked well. Hope to add 3 – 5 additional years of life.**
- **Works best on milled surfaces**
- **Best for use on mainline only: issues with no milling, rumble strips, paver width**
- **Patch, grind, crack seal, pave UTBWC**
- **Pavement markings need grinding**
- **Do not recommend on composite roadways/HMA resurfacing – reflective cracking evident within several months.**

# District Three - UTBWC

- MD 109
- MD 650
- MD 373
- MD 193
- Timeframe: Ad dated TBD.

# District Four--UTBWC

- MD 30
- MD 130
- Timeframe: NTP on 6/12/16, pave Spring 2017

# District Five - UTBWC

- MD 2, NB/SB, Coster Mill Bridge Rd.
- Time Frame: Ad dates TBD. Single ad projects

# District Seven

- Micro Surfacing:
  - Two projects in Carroll County
  - One project in Frederick County
- Time Frame: NTP July 2017

- UTBWC:
  - I-70 WB fr MD 27 to MD 75 (half UTBWC, half Gap)
  - I-70 WB fr. MD 75 to Monocacy River, (half UTBWC, half Gap)
- Time Frame: Ad dates April and December 2017

PAGD working with D7 to develop a budget and list of candidates for UTBWC for FY 19

1999: Ultra Thin Bonded Wearing Course MD 180 Frederick County

# District Six--UTBWC

- MD 36
- MD 61
- Time Frame: Advertise in Spring 2017 depending on budget. May expand to Interstate locations.

# Good Candidate: Maryland Rt. 36, June 2016

Starting up at expansion joint.

After slight hiccup, paving train started.

# Making the best of a difficult situation.

# Delivery temperature

Night time paving operation


Pavement temperature. Should be 225. Have to consider night time temps were around 60 – 65F


ejbreneman.com

# Resulting Pavement Macrotexture – Very consistent


SUPER SHOES
STOP

# Questions?

# Thank you!